Space Weather Forecast

Issued on Friday, 11 November 2022 at 01:22 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Slight Chance of isolated Moderate class flares (Minor to Moderate radio blackouts).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low, with occasional low level Common-class flares, the largest of which originated from AR3141. This region has developed slightly over the past 24 hours, and is now moderate in size and with a complex geomagnetic configuration, close to centre disc. There are two remaining numbered regions on the visible disc, both significantly smaller and weaker than AR3141.

No Earth-directed Coronal Mass Ejections (CMEs) have been observed on available imagery.
Solar Wind / Geomagnetic Activity: The solar wind has been at background levels. Total magnetic field strength, IMF, has been weak, with the important north-south component also weak and mainly positive (northward pointing). Geomagnetic activity was Quiet (Kp 0-1).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to predominantly be at Low levels, with a slight chance of Moderate activity. However, over the next few days, three returning active regions are due to potentially rotate across the limb. Therefore the probability of a significant flare is likely to increase over the coming days, once the expected regions rotate onto the Earth facing side of the Sun.

Solar Wind / Geomagnetic Activity: Geomagnetic activity is expected to be mainly Quiet to Unsettled. There is a chance of Active intervals during the period, and a slight chance of G1/Minor Storms on days 1 and 2 (11 & 12 Nov) if weak coronal hole connections occur.

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) is forecast to persist at background with no solar radiation storms anticipated.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	5	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	20	20	20	20
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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